

## ADDITIONS TO THE COLLECTION OF MAMMALS IN THE TRANSVAAL MUSEUM.

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CATALOGUES of the collection of African Mammals have already been published in the preceding Volume of the Annals (Vol. IV, pp. 65-109 and pp. 180-186), and in view of so little having been recorded of South African Mammals, I propose to continue to publish annual lists of acquisitions. During the year ending 31st December, 1914, as much time as could be put into the service was devoted to field work by the writer. Six weeks was spent between Carolina, Barberton, and Nelspruit, in the Eastern Transvaal, in May and June, when forty-three mammals, besides double the number of birds, were preserved; four days were spent at Zoutpan in the "Bushveld" of Pretoria District in October, in company with the director, Dr. H. G. Breyer, and Messrs. H. L. Hare, J. Breyer and J. Jorissen, when twelve mammals besides twenty birds (kindly skinned by Mr. Hare) and other specimens were collected. In December eight days were spent at Moorddrift, a siding on the Pretoria-Pietersburg Railway line, and some ten miles south of Pietpotgietersrust, when thirty-six small mammals and eleven clutches of birds' eggs were taken; and finally a week was spent at Woodbush, when about a dozen more mammals and six birds were secured. Besides these collections, a few specimens were captured in the vicinity of Pretoria and a few were collected and donated by gentlemen interested in the study.

An expedition was also made by the director, Dr. Breyer, to the Maputa River in Portuguese South-east Africa, and then by the first assistant, Mr. C. J. Swierstra, to Northern Zululand, when, on both occasions, the taxidermist, Mr. Noome, was able to obtain and prepare for mounting a good set of specimens of large mammals, a separate list of which is given.

At some future date an account of the habits and distribution of most of the smaller species will be published.

The following is a systematic list of additions in mammals to the collection during the year:—

*Galago moholi* A. Smith.

1 ♂, Moorddrift, Waterberg District.

*Epomophorus wahlbergi haldemani* Hallowell.

1 old ♀, Barberton.

This specimen was found hanging to creepers in a gully in the town of Barberton; there seemed to be no others about, though I searched assiduously, as from my previous experience I had always found these fruit-bats congregated in parties in the trees. It is strange that this smaller race, which has not previously been recorded south of the Zambesi, should occur in the same region as the larger typical race; but I have no doubt as to its identification, the skull indicating the age of the specimen, while all the measurements are those of the smaller race. Both the typical and this smaller race are said to occur side by side in East Africa (see Andersen, "Megachiroptera," p. 525). Jameson [Ann.

Mag. N.H. (8), Vol. 4, p. 469] suggests that these bats are more or less migratory, which may account for their occurrence side by side in some places. The following are measurements of this specimen:—External measurements: head and body, taken in the flesh, 130 mm.; forearm, 78; pollex, total length, *c. u.*, 35, metacarpal 13·7, first phalanx 16·5; second digit, metacarpal, 40·5, first phalanx 7·8, second and third phalanx, *c. u.*, 10; third digit, metacarpal, 57·5, first phalanx 35·3, second phalanx 50; fourth digit, metacarpal, 55, first phalanx 28, second phalanx 28·5; fifth digit, metacarpal, 53, first phalanx 27, second phalanx 25. Skull: total length 44·5, mandible 35, C-M<sup>3</sup> (crowns) 15·8, M<sup>1</sup> length 3·6, M<sup>1</sup> length 3·3, front of orbit to tip of nasals 16·5, width of brain case at zygomata 16·3, zygomatic width 25·5, across crowns of M<sup>1</sup> 13·4, across crowns of canines 8·9, postorbital width 10·2, interorbital width 9·1, width mesopterygoid fossa 6·7, width between p<sup>1</sup>, internally 7·8, width between cingula of canines 4·7, orbital diameter 10, coronoid height of mandible 15·5.

*Elephantulus rupestris Jamesoni* Chubb.

1 ♂ (without a tail), 2 ♀♀, Warmbath, Carolina District.  
1 ♀, Gladdespruit, Carolina-Barberton road.

*Nasilio brachyrhynchus* A. Smith.

3 ♂♂, Zoutpan, Pretoria District.

These specimens are apparently typical; two are evidently young, the tail measuring 86 mm. as against 103 in the third, though the length of the head and body is the same in all three, namely about 100 mm.; the skull of the longer tailed specimen is broken, but is a little broader across the zygomatic arches than the other two.

*Crocidura cinnamomea* (Licht).

1 ♂, Gladdespruit, Carolina-Barberton road.

*Crocidura mariquensis* A. Smith.

1 ♂, and skull of larger ♀ with measurements, Moorddrift.

The skin agrees with Smith's short description of the species. Measurements of the two specimens are as follows:—

	H. and B.	Tail.	Hd. ft.	Ear.	Skull, greatest length.	width.	Dental series.
♂	72	41	11·5	9	22·1	9·6	9·6
♀	96	43	13	9	22·9	10·3	9·9

The female had three inguinal pairs of mammae.

*Crocidura silacea* Thos.

1 ♀, Woodbush Village.

This specimen had only one, inguinal, pair of mammae.

*Myosorex tenuis* Thos. and Schw.

1 ♀, Sterkloop forest, Woodbush.

*Graphiurus murinus tzaencensis* Rbts.

1 ♂, Sterkloop forest, Woodbush.

By mistake the tail of this subspecies was described as having a white tip: the tip of the tail is white in the Waynek specimen, which should

apparently be referred to *G. nanus*; but in the type of *tzaneenensis* the tip of the tail is the same colour as the rest; the end of the tail is missing in the cotype; the Woodbush specimen is identical with that of the type. The smaller teeth distinguish this form from the typical one.

*Tatera lobengulæ bechuanæ* Wr.

- 1 ♂, 1 ♀, ad., 1 ♂, 1 ♀, juv., Worcester Mine, Barberton District.  
 2 ♂♂, 2 ♀♀, Zoutpan, Pretoria District.  
 3 ♀♀, Moorddrift, Waterberg District.

*Tatera Brantsi* (A. Smith).

- 1 ♀, Vijgeboomsport, Waterberg District (G. van Dam).

*Mus chrysophilus tzaneenensis* Jmsn.

- 1 ♂, 1 ♀, Woodbush Village.  
 1 ♂, 1 ♀, 1 juv. ♂, Theespruit, Carolina District.  
 1 ♀, Devils Knuckles, Barberton.  
 1 ♂, 1 ♀, Worcester Mine, Barberton.  
 1 ♀, Nelspruit Station, Barberton.  
 3 ♀♀, Moorddrift, Waterberg.

*Mus chrysophilus pretoriæ* Rbts.

- 1 ♂, 2 ♀♀, Waterkloof, Pretoria (topo-typical specimens).  
 1 ♂, Wonderboom, Pretoria.  
 5 ♂♂, 1 ♀, ad. and old, 1 ♂, juv., Moorddrift, Waterberg.

In all the old specimens of *tzaneenensis* the tail measures over 160, usually about 170 mm., whereas in equally old specimens of either sex of *pretoriæ* it seldom reaches 160, usually measuring 150 to 155 mm. These series of skins with skulls, together with those previously recorded (Ann. Tvl. Mus., Vol. IV, No. 2, p. 85), seem to indicate that *pretoriæ* is a distinct species characterized by having a shorter tail than *chrysophilus*. Specimens from Zoutpan and Moorddrift are brighter yellowish than the typical ones from the hills above Pretoria and should perhaps be referred to another race, especially if *pretoriæ* proves to be a distinct species.

The number of mammae is six, that is, one pair pectoral and two pairs inguinal; but the pectoral pair does not appear ever to be fully developed or brought into use.

*Mus namaquensis Grahami* subsp. nov.

Mr. Hewitt, curator of the Albany Museum, has sent me three specimens of this species for identification; they were collected by Master R. Graham at Godwin's Kloof, Grahamstown, and as they are referable to a remarkably long-tailed race, I am naming it after him in recognition of the assistance he has rendered the Albany Museum in collecting a number of interesting small mammals.

This subspecies is larger in all respects than any other form of the species previously described; in fact, it approaches *Mus chrysophilus* in this respect, though it is obvious from the narrowness of the skull and the teeth that it is a larger race of *M. namaquensis*. In colour it resembles a specimen we have of the typical form from Klipfontein. The measurements of the length of head and body and tail seem to have been wrongly taken, the former having been taken to the base of the scaled portion of the tail, and the latter thence to the tip without the hair;

for this difference I have made allowance and give in brackets what I take to be the correct measurements :—

	Type ♂ ad.	♂ ad.	♂ ad. (younger).
Head and body ...	125 (118)	130 (123)	130 (124)
Tail ...	175 (182)	170 (177)	160 (166)
Hind foot ...	27	27	27
Skull, greatest length ...	33·2	33	31·8
Basilar length ...	25	24·8	24
Zygomatic width ...	15·5	15·2	15·2
Molar series ...	5·2	5	5
Diastema ...	8	8	8
Bullæ ...	5	5·1	4·9
Interorbital constriction..	4·7	4·7	4·6
Width Brain case ...	14	14	13·5
Nasals ...	13·3 × 3·6	13·3 × 3·6	13·5 × 3·4

Colour: the whole of the upper surface of the head and body is clothed with long, fairly soft hair, measuring about 10 mm. in length, with which, especially on the back, are intermingled longer bristles measuring about 15 mm.; the general dorsal appearance is a mingled tawny-buff and black, the individual hairs being dark grey at the base, then tawny-buff and finally glossy blue-black at the tips. On the flanks the black hairs disappear, producing a more uniform buffish. The cheeks are more buffy than the forehead, and show only a sprinkling of blackish tipped hairs. The ears are dark coloured, sparingly covered with short buffish coloured hair. The legs are coloured like the flanks, and the feet pure white. The under surface is white, with a tinge of buffish in the type, with the base of the hair grey. The tail is buffish below, brown above, clothed with a fair sprinkling of correspondingly coloured hairs which become more numerous towards and at the tip.

The type is in the Albany Museum, and the other two specimens have been kindly presented to the Transvaal Museum.

*Mus namaquensis monticularis* Jmsn.

- 1 ♂, Waterkloof, Pretoria.  
 1 ♂, 1 ♀, Warmbath, Carolina.  
 1 ♂, Theespruit, Carolina.  
 2 ♂♂, Worcester Mine, Barberton.

*Mus namaquensis auricomys* De Wint.

1 old ♀, with young one found clinging to it, Moorddrift, Waterberg.

The number of mammae is similar to that of *M. chrysophilus*, the pectoral pair being rudimentary.

*Mus Moggi* Rbts.

- 3 ♀♀, 1 ♂, Zoutpan, Pretoria.

In the original description the hind foot and ear are given as 18 and 20 mm. respectively; but with this new material, I think that a mistake was made in recording the measurements originally, and that the figures should be reversed. The species seem to be most closely allied to *Mus damarensis*, from which it differs in having smaller teeth. The following figures will give a better idea of the proportions of this rat than

those given in the original description, and will also serve for comparison with a larger form found farther north :—

	Old ♀.	Ad. ♀.	Ad. ♂.
Head and body ... ..	120	117	114
Tail ... ..	130	128	136
Hind foot ... ..	21	21	22
Ear ... ..	19	18	19
Skull, greatest length ... ..	31·8	30·5	30·8
Basilar length ... ..	26·1	24·6	24·8
Zygomat. width ... ..	16·2	15·1	14·7
Molar series ... ..	4·4	4·3	4·6
Diastema ... ..	8·5	7·7	7·5
Interorbital constriction ... ..	4·7	4·2	4·5
Nasals... ..	11·5 × 3·6	11·2 × 3·2	11·1 × 2·9
Width Brain case ... ..	12·8	12·9	12·7
Bullæ ... ..	6·8	6·6	6·3

*Mus Moggi acaciae* subsp. nov.

1 ♂, 3 ♀♀, 1 juv. ♂, Woodbush.

3 ♀♀, Moorddrift, Waterberg.

This subspecies differs from the typical one in being larger, though the size of the teeth remains the same. The following measurements will illustrate the difference in size :—

	Type, old ♀.	Ad. ♂.	Younger ad. ♀.	Immature ♀.
Head and body ... ..	139	138	132	109
Tail... ..	155	160	153	135
Hind foot ... ..	24	24	24	23
Ear ... ..	21	21	19	18
Skull, greatest length ... ..	34·4	32·7	31·5	29
Basilar length ... ..	28	25·9	25·5	23·2
Zygomat. width ... ..	16·6	17·7	16·4	14
Molar series ... ..	4·4	4·4	4·2	4·5

The first three of these specimens and a young one were taken from the same tree; the young one, although only half the size of the adults, is coloured exactly like them. In all these specimens from Woodbush there is a tinge of pink on the chest or forearms, apparently due to some staining matter in their food. In fully adult specimens the mammae are six in number, that is, one pair pectoral and two pairs inguinal.

*Mus Breyeri* spec. nov.

This species, unlike any other with which I am acquainted in South Africa, has only five pads on the hind feet; it much resembles the multimammate mice in general appearance, but is rather larger and has a broader skull.

Description:—Whole of the upper surface of head and body dull yellowish mixed with an equal proportion of blackish, the individual hairs being very dark slate grey at the base, then yellowish, and finally the tips glossy blackish. On the flanks and cheeks the black tipped hairs disappear, so that a lateral yellowish mark extends along them, separating the paler under surface from the darker upper surface of the head and body. The chin and anal areas are almost pure white, a patch across the lower throat yellowish like the flanks, and the rest of the under surface

whitish, the individual hairs being of a lighter grey at the base than those on the upper surface, and tipped with white. The feet are white. The tail is sparingly clothed with dark brown bristles above and white ones below; the rings are about 35 to the inch. The shorter matted hairs measure about 10 mm., and the longer bristles about 15; they are all soft in texture.

The type is an old male from Moorddrift, with the teeth much worn down, and gives the following measurements: "Head and body 130, tail 125, hind foot 25, ear 19·5": skull, greatest length 31·7, basilar length 26·5, zygomatic width 16·3, width brain case 12·4, interorbital constriction 4·2, molar series 4·7, diastema 8·8, bullæ 5, nasals 12·5 × 3·3.

Last year I trapped a similarly coloured mouse in some thorn scrub near Messina in the Northern Transvaal; but as I was unable to look at the trap for some days owing to my being busy in preparing a lion skin, the specimen was too much decomposed to skin when I found it. Noticing that it was of a species I had not previously met with, I measured the specimen as well as I could and kept the skull, which is still in the collection. It proves to be larger in all respects than the type from Moorddrift. I have no doubt that this species is one which is peculiar to the bushveld scrub and varies geographically like *Mus Moggi*.

I have named the species in honour of Dr. H. G. Breyer, to whom is due the facilities given me to carry out this all important field work.

*Mus*, spec.?

- 1 ad. ♀, Gladdespruit, Carolina. Mammæ 18.  
1 old ♀, Devils Knuckles, Barberton. Mammæ 18.  
1 old ♂, Barberton.

*Mus*, spec.?

- 4 ♂♂, Worcester Mine, Barberton.

*Mus*, spec.?

- 2 ♂♂, Worcester Mine, Barberton.

*Mus*, spec.?

- 1 ♂, 1 ♀, in spirits (both old), Onderstepoort, Pretoria (pres. G. A. H. Bedford).  
1 ♂, 1 ♀, in spirits (both old), Rooiplaat, Pretoria (pres. Dr. H. G. Breyer).  
Mammæ in both old ♀♀, 16 in number.

*Mus*, spec.?

- 1 ad. ♀, 2 older ♂♂, Moorddrift, Waterberg District.  
1 ad. ♂, Zoutpan, Pretoria District.  
Mammæ in an adult ♀ not preserved, 20 in number.

*Mus*, spec.?

- 1 old ♀, Woodbush Village. Mammæ 20.

All the above-mentioned specimens apparently belong to the multi-mammate group; but until I have more material, no good purpose would be served by naming them. Those from the same localities show very little variation amongst those of the same age.

*Dasymys incomptus* Sund.

- 1 ♂, Gladdespruit, Carolina.  
2 old ♂♂, in spirits, Onderstepoort, Pretoria (pres. G. A. H. Bedford).

*Saccostomus Streeteri* Roberts.

2 ♂♂, 1 ♀, Moorddrift, Waterberg.

These specimens have the characteristics of the species in regard to colour, but are a little larger than the type series. The mammae are ten, three pairs pectoral and two pairs inguinal.

*Georychus Jorisseni* Jameson.

1 old ♂, 1 juv. (3 molars), Moorddrift, Waterberg.

Measurements of the old male are : Head and body 115, tail 14, hind foot 21 ; of the skull : Condyllo-incisive length 34·2, occipito-nasal length 31·1, basilar length 27·5, zygomatic width 22·1, width brain-case behind squamosals 13·2, interorbital constriction 6·8, breadth premaxilla 5·7, nasals 12·5 × 3·6, molar series 5·1, diastema 10·8, breadth of incisors at entry into premaxilla 3·5, greatest diameter of bullæ 7·5. The colour of both specimens is like that of the cotype. The old ♂ was trapped in burrows amongst some small aloes, fragments of the leaves of which were found in the burrows.

*Georychus*, spec.? (No. 207 in my first list).

2 ♀♀, Woodbush.

These specimens are precisely like those mentioned in my first list of mammals in the Transvaal Museum, from Pirie, Malvern, Hector Spruit and Tzaneen. The mammary formula is like that of *G. natalensis*, *arenarius* and *Jamesoni*.

*Georychus arenarius* Rbts.

1 old ♂, Krantzview, Carolina.

1 old ♀, 1 ad. and 1 juv. ♀♀, Warmbath, Carolina.

*Georychus Jamesoni* Rbts.

1 old ♀, Krantzview, Carolina.

This specimen was trapped in dry ground, whereas those of *G. arenarius* were trapped in moister sandy soil where the vegetation was different. It is somewhat smaller than typical specimens.

*Lepus zuluensis* Thos. and Schw.

1 ♀, Worcester Mine, Barberton.

1 ♀, Moorddrift, Waterberg.

*Pronolagus Ruddi* Thos. and Schw.

1 ♀, Barberton.

*Pedetes caffer salinae* Wr.

1 ♂, 1 ♀, 1 juv., Moorddrift, Waterberg.

The following are flat skins, prepared for mounting, of specimens collected by the Maputa River-Zululand expedition, some of which are already mounted and others in the course of preparation for the same purpose:—

*Galago crassicaudatus* E. Geoff.

1 ♂, Maputa River, Portuguese South-east Africa.

*G. Garnetti*, *G. zuluensis* and *G. agisymbanus* are apparently all referable to the same species and good grounds have not so far been

advanced for separating them even into geographical races (=subspecies); the species appear to have been founded on individuals of different age or sex, for which the proper allowance does not seem to have been made. *G. kirki* may however still prove to be a good subspecies of *crassicaudatus*.

*Papio porcarius* (Bodd.).

1 ♂, Ubombo District, N. Zululand.

*Hyaena crocuta* Erxl.

1 ♀, 1 ♂, Ubombo District, N. Zululand.

*Felis pardus* Linn.

2 ♀♀, Ubombo District, N. Zululand.

*Elephas africanus* Blum.

1 ♂, Maputa River, Portuguese South-east Africa.

*Hippotigris Chapmani Wahlbergi* Poc.

1 ♂, 1 ♀, Ubombo District.

*Potamachoerus choeropotamus* (Desm.).

1 ♂, Ubombo District.

*Phacochoerus aethiopicus* Linn.

2 ♂♂, Ubombo District.

1 ♀, Maputa River.

*Connochaetes taurinus* (Burch.).

2 ♂♂, 2 ♀♀, Ubombo District.

*Cephalophus natalensis amaenus* Wr.?

2 ♂♂, 1 ♀, Maputa River.

1 ♂, Ubombo District.

*Cephalophus grimmi* Linn.

3 ♂♂, 2 ♀♀, Maputa River.

*Rhaphiceros campestris natalensis* Rothsch.

1 ♀, Theespruit, Carolina District.

*Rhaphiceros campestris capricornis* Thos. and Schw.

1 ♂, 2 ♀♀, Maputa River.

*Nesotragus Livingstonianus zuluensis* Thos.

2 ♂♂, 1 ♀, Ubombo District.

*Cobus ellipsiprymnus* (Ogilby).

1 ♂, 1 ♀, Maputa River.

2 ♂♂, Ubombo District.

*Redunca arundinum* (Bodd.).

2 ♀♀, Maputa River.

*Aepyceros melampus* Leht.

2 ♂♂, 2 ♀♀, Maputa River.

2 ♂♂, 1 ♀, Ubombo River.



*Tragelaphus sylvaticus* (Sparrm.).

1 ♂, 1 ♀, Maputa River.

1 ♂, 1 ♀, Ubombo District.

*Strepsiceros Angasi* Ang.

1 ♂, 1 ♀, Maputa River.

1 ♂, 1 ♀, Ubombo District.

*Strepsiceros strepsiceros* Pall.

1 ♂, 1 ♀, Maputa River.

1 ♂, Ubombo District.

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